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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/716,934

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Jose Tamez-Pena

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EXAMINER

CWERN, JONATHAN

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/716,934	Applicant(s) TAMEZ-PENA ET AL.	
	Examiner Jonathan G. Cwern	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/22/05, 3/22/06, 4/24/07</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings appear to be handwritten, and the writing is difficult to read, for example in Figures 1-4. In addition, several figures are difficult to see, such as Figures 5a-5c, 7, and 8a-8b. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: There appears to be unnecessary spaces in words throughout the specification. For example, on page 6, line 15, and page 10, line 14. Applicant is advised to carefully check through the entire specification for other occurrences of this error.

Appropriate correction is required.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims merely set forth a method of determining a value, and do not produce a useful, concrete, and tangible result.

Claim Objections

Claims 1-22 are objected to because of the following informalities:

In claim 1, it is unclear as to what a step of "taking image data" involves.

Also, the claims are incomplete because claims 1 and 14 set forth a method of evaluating a condition in a region of interest, however no steps or means for providing an evaluation are set forth.

In claims 11 and 20, the word "measure" is misspelled.

In claims 13 and 22, it is unclear whether a "change in time" or a "change over time" is being measured.

Claim 14 only sets forth an input and a processor. It is unclear as to how an "input" is a structural element. Also, the claim includes functional language unsupported by structure to produce such functions. The claim should set forth that the processor is programmed to perform those functions.

In claim 16, there appears to be unnecessary spaces in several of the words. These spaces should be removed.

It is unclear as to what further structural limitations are set forth in claims 19-21. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pelletier et al. (US 6560476) in view of Lang et al. (US 2002/0177770).

Pelletier et al. show a method of using an MR system to tracking the progression of diseases affecting cartilage. Images of a patient's knee are acquired, with the data

optimized to detect bone and cartilage. The images are acquired over a period of time, and are compared to detect differences between the images, to track disease progression in cartilage. These can include differences in cartilage thickness, cartilage volume, and the characteristics of cartilage material. The image data contains the load-bearing surfaces of the joint. The image can be segmented automatically to determine different regions of the joint (column 2, line 25-column 3, line 40). Both the bone surface and the cartilage surface are segmented. The user assists the process by manually delineating the bone-cartilage interface. An active contour algorithm is applied to the manual contours to more closely define the outline of the bone-cartilage interface (column 12, lines 42-67). Note that this can be considered as “relaxing boundaries of the bone features”. The cartilage is then represented by two maps, a volume image map and a thickness image map. Different structures with the joint can be quantified separately. Specific regions of the cartilage volume and thickness can be separated and analyzed to aid the physician in determining a more precise understanding of the disease progression (column 14, lines 13-43). This will therefore include load-bearing and non-load bearing structures, although those words are not explicitly stated.

Lang et al. disclose a method of assessing the condition of a joint and assessing cartilage loss. Lang et al. teach the importance of identifying the load regions of the joint to aid in planning a treatment procedure ([0466]).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have divided the cartilage into load-bearing and non-load-bearing regions in the method of Pelletier et al. Pelletier et al. show segmentation, and

that different structures in the joint can be quantified separately. By dividing the cartilage into specific regions and analyzing those regions, the physician gains a more precise understanding of disease progression. And while Pelletier et al. do not explicitly state that the specific regions can be load-bearing and non-load-bearing regions, Lang et al. teach the importance of identifying those load-bearing regions to evaluate disease progression and plan for treatment.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Cwern whose telephone number is (571)270-1560. The examiner can normally be reached on Monday through Friday 9:30AM - 6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jonathan G Cwern/
Examiner, Art Unit 3737

/Ruth S. Smith/
Primary Examiner, Art Unit 3737